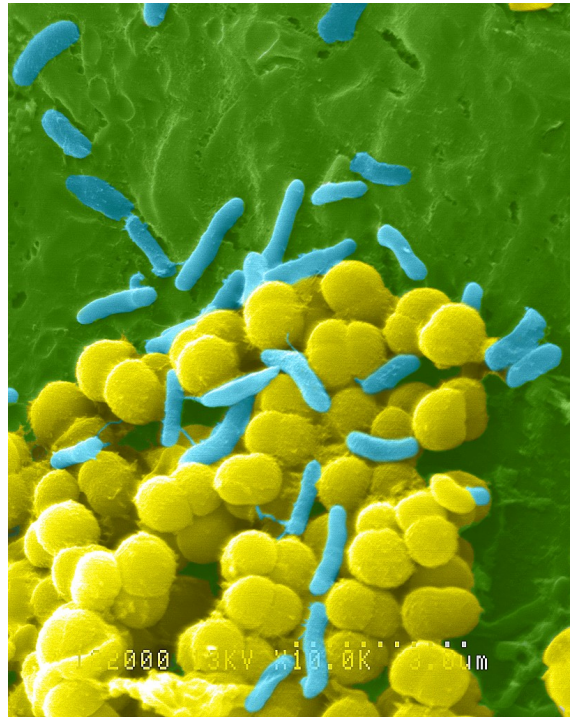


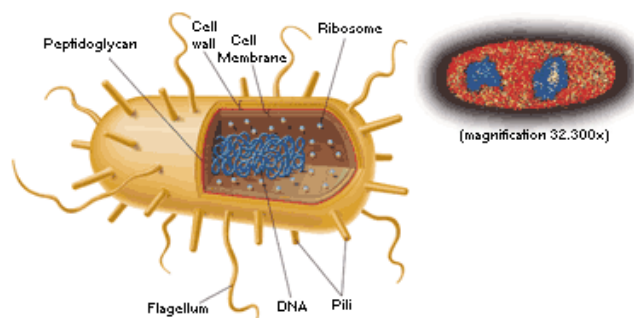
Prokaryotic Life



Nov 7-6:39 PM

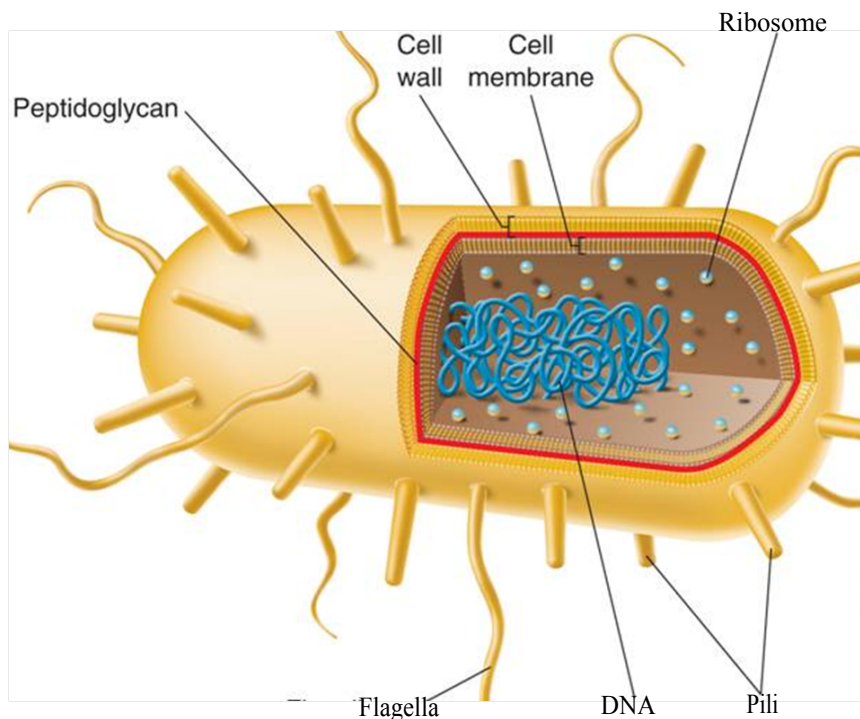
Prokaryotes- *bacteria*

- The smallest and most common microorganisms
- Lack a nucleus
- Have a cell wall. (May have peptidoglycan)
- Divided into 2 domains: Archaea and Bacteria



Nov 7-7:19 PM

- *E. coli*, a Typical Eubacterium



Nov 7-7:21 PM

Domain- Archaea

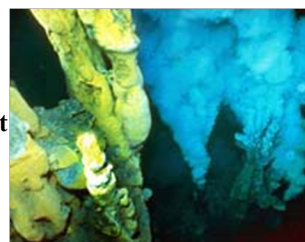
Kingdom- Archaeobacteria

- Are ancient.
- Lack peptidoglycan.
- Live mostly in harsh environments
 - Salty lakes
 - Thick mud
 - Deep ocean vents
 - Guts of animals

Hot Spring Pool @ Yellowstone



Deep Ocean Vent

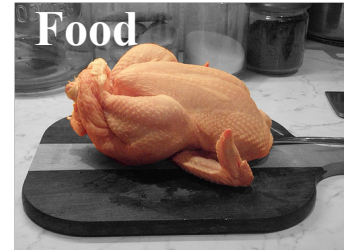


Nov 7-7:25 PM

Domain- Bacteria

Kingdom- Eubacteria

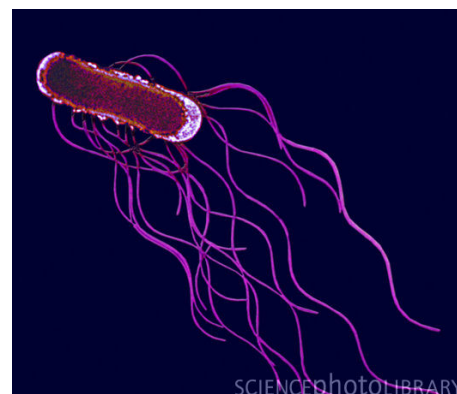
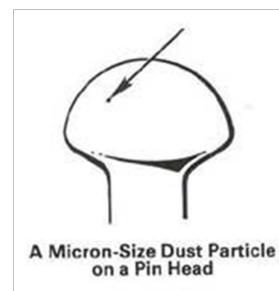
- Considered “true bacteria”
- The largest kingdom of prokaryotes
- Have peptidoglycan.
- Live almost everywhere.



Nov 7-7:29 PM

Characteristics of Bacteria

- Small
- few micrometers in length
- Unicellular
- Found Everywhere
- Many Cause Disease
- Many are Useful
- May have flagella for movement

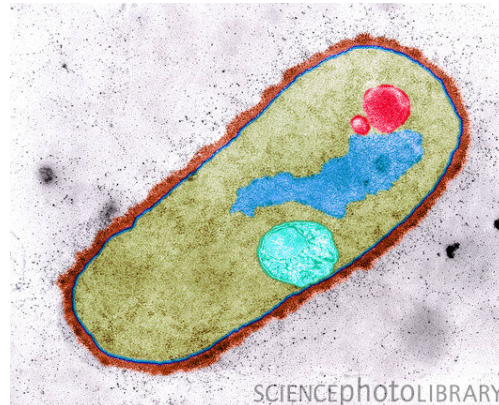
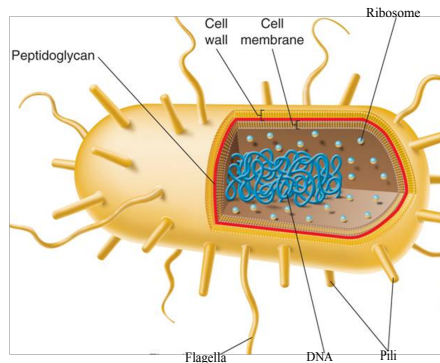


Nov 7-7:32 PM

Characteristics Continued

- Have a cell wall

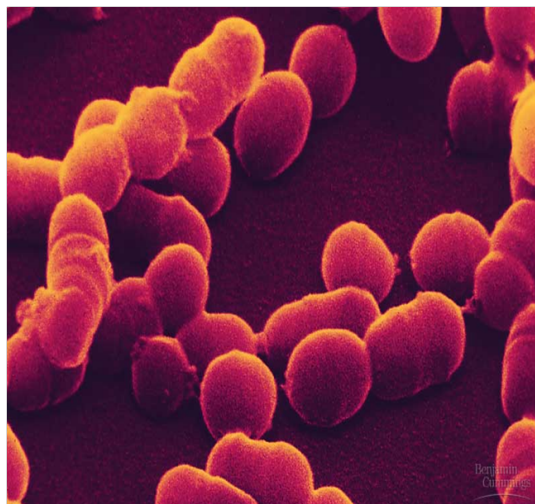
May contain peptidoglycan (a sugar & protein polymer)



Nov 7-7:48 PM

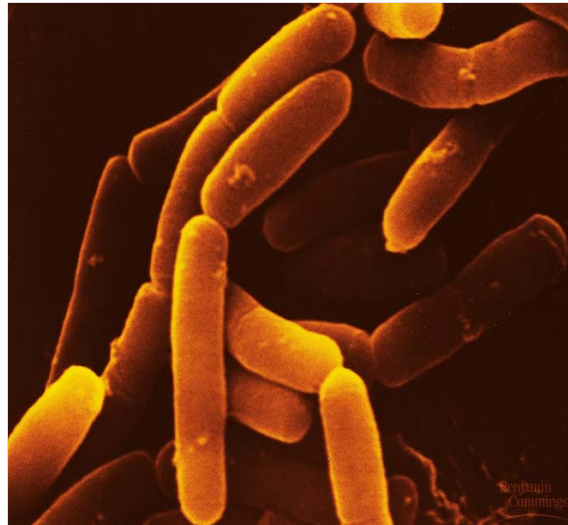
Can be classified by shape:

Cocci- round or spherical



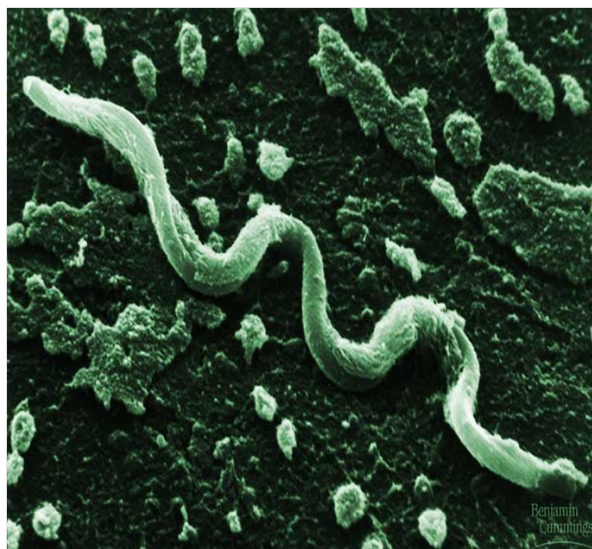
Nov 7-8:09 PM

Bacilli- rod shaped



Nov 7-8:10 PM

Spirilla- spiral

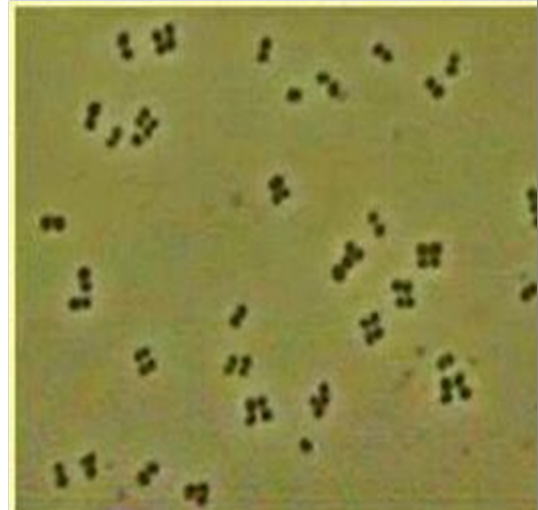
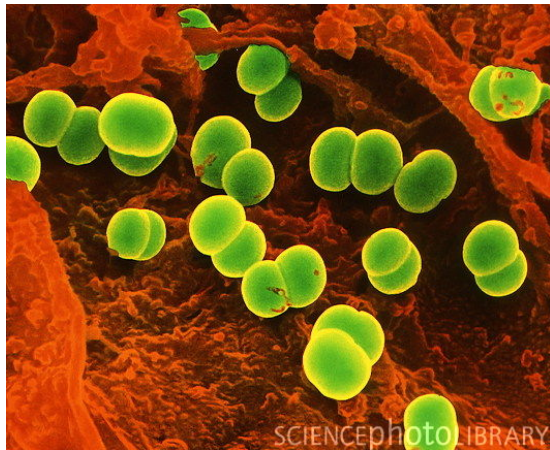


Nov 7-8:11 PM

Arrangements of cells

Prefixes Used to Describe & Identify Bacteria:

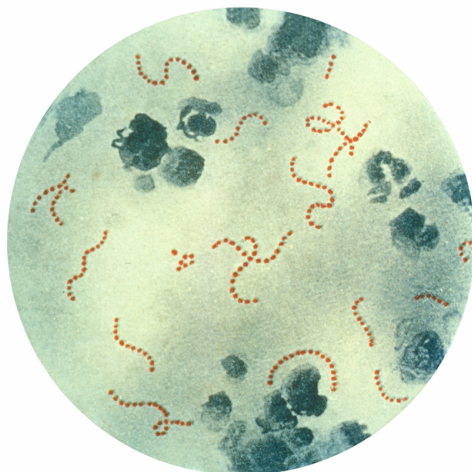
Diplo = 2



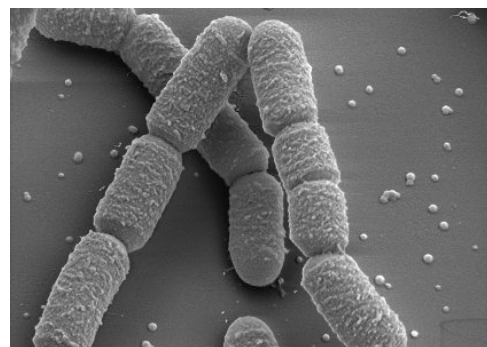
Diplococcus

Nov 7-8:12 PM

Strepto = chain



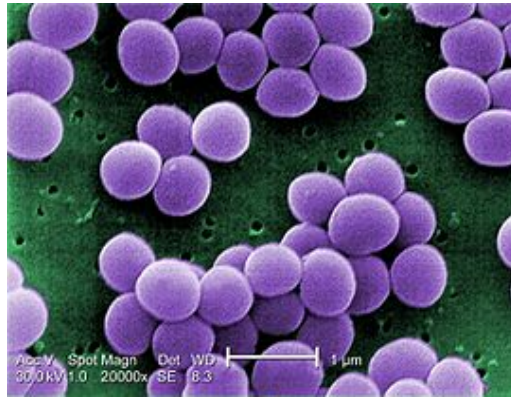
Streptococcus pyogenes



Streptobacillus

Nov 7-8:18 PM

Staphylo =clumps

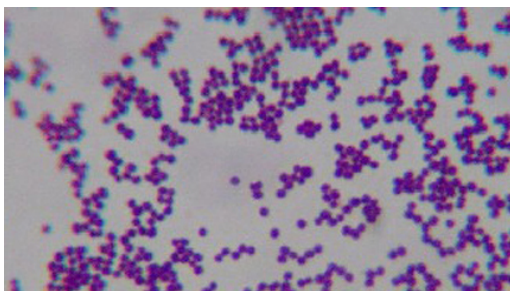


Staphylococcus

Nov 7-8:35 PM

Can be classified by Gram Stain:

- Gram Staining - used to identify bacteria with extra membranes
- Extra membrane helps them to better resist damage.
- Gram + stain purple (have peptidoglycan)
- Gram - (extra membrane) stain red or pink



Nov 7-8:45 PM

Prokaryotes can be autotrophs or heterotrophs

- *Autotrophs:*

Produce their own food, by sunlight or inorganic chemicals

- *Heterotrophs:*

Obtains energy by consuming other organisms

Nov 7-8:52 PM

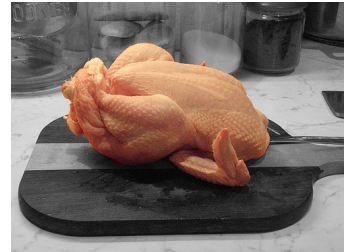
Energy can be released by:

- *cellular respiration* if there is oxygen available
- *fermentation* if there is no oxygen.

Nov 7-7:44 AM

Diversity of Bacteria

Bacteria can be found virtually everywhere. They are in the air, soil, water, and in and on plants and animals, including us.



Nov 7-8:03 AM

Why are bacteria so successful in evolving?

- Recall: All living organisms have evolved from a common ancestor.
- Bacteria have a short, rapid reproduction time

Nov 7-8:09 AM